

Hobbies

WEEKLY

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FREE DESIGN SHEET OF
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READERS interested in bee-keeping and wishing to start in the business, can quite easily make for themselves a satisfactory hive. It is just an ordinary job of woodworking. A decent quality of sound deal will be good enough timber for the job, with a thickness of $\frac{3}{4}$ in. The measurements given are suitable for wood of that thickness, but as long as the interior dimensions of the hive are adhered to, any other thickness can be used.

A front elevation of the hive, less stand, is given in Fig. 1 and a side elevation in Fig. 2. From these drawings the general dimensions can be taken. The hive is in three parts (A), (B) and (C), parts (B)

and (C) fitting one on another, and part (A) itself fitting on a stand.

As a common butt joint is not too good for such an article, having to stand the stress of weather, a rebated joint is suggested, as shown in detail sketch (D).

A STANDARD SIZE BEEHIVE

For this the front and back pieces of the hive are rebated $\frac{1}{4}$ in. by $\frac{1}{8}$ in. for the sides to enter.

It is very important, considering the parts sit one on another, for (A) and (B) to be exactly the same size, so these parts should be marked out together and be accurately rebated. Part (C) fits over (B), so its interior dimensions should just equal the outside dimensions of (B). Put these parts together with glue and nails, and it will be a good plan to use one of the waterproof casein glues now on the market, instead of the ordinary kind.

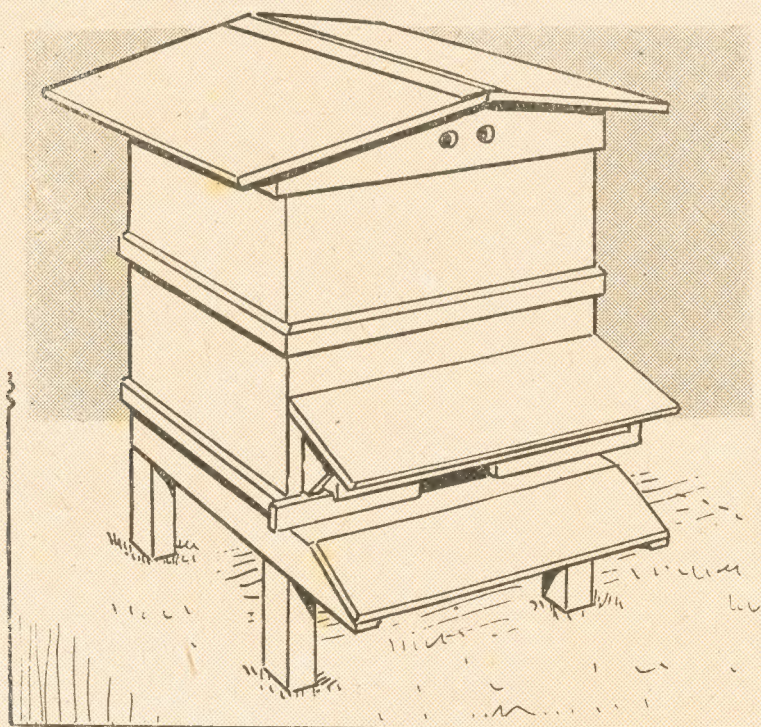
Assembly

To keep the parts in place, strips of $1\frac{1}{2}$ in. wide wood are glued and nailed to (A) and (B), to overlap forming a kind of rim. These extend to all four sides of (B), but only the sides and back of (A), as the entrance to the hive, at the bottom, must not be obstructed. To keep the roof section (C) in position, a fillet of wood is nailed along each side, as at (E), just $\frac{1}{2}$ in. up from the bottom edges.

To this section the roof boards are nailed, and should well overlap the sides and front. Bevel these where they meet at the ridge, and cover the joint with a strip of zinc bent over and nailed down.

Weatherproof Boards

If possible use one board each side of the ridge, but if two or more have to be used, employ a tongued and grooved boarding for the job, to avoid any wet seeping through. In the front and back of this section bore a couple of 1 in.



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ventilation holes, and cover these on the inside with wire gauze or perforated zinc to keep out unwanted intruders.

To support the porch, covering the entrance to the hive, cut a pair of brackets, as shown at (F), and screw these to the front of the hive, where shown, just $\frac{3}{8}$ in. from the bottom edge. These should be screwed from the inside of part (A), so are placed about 1 in. from the sides. The porch cover can be fitted on later.

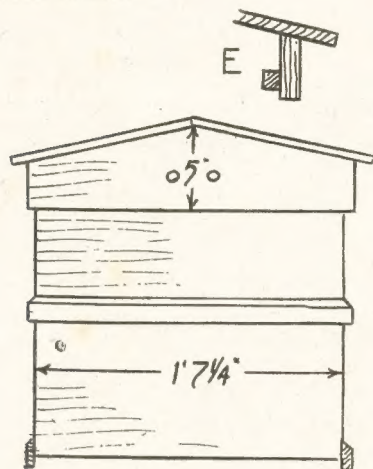


Fig. 1—Front elevation of hive

All parts should now be tried for fit, and if inclined to be stiff, eased with a little glasspapering. It may be added that the top edges of the rim pieces are best bevelled, as seen in the drawings, to throw off any water that may trickle down, and a good plan, also, is to paint the inner faces of them with thick paint to seal the joints as they are nailed on.

The Stand

Fig. 3 shows the stand which supports the hive. The side pieces of these (G) are cut from thick wood, stuff of $1\frac{1}{2}$ ins. by $2\frac{1}{2}$ ins. size would do nicely. It will be seen that 8 ins. of this are reduced to $1\frac{1}{2}$ ins., so that if wood of $\frac{3}{8}$ in. thickness is nailed across it, it will come level with the rest. If wood of thicker stuff be used, the reduction must be amended to suit. For instance, if $\frac{1}{2}$ in. board is employed,

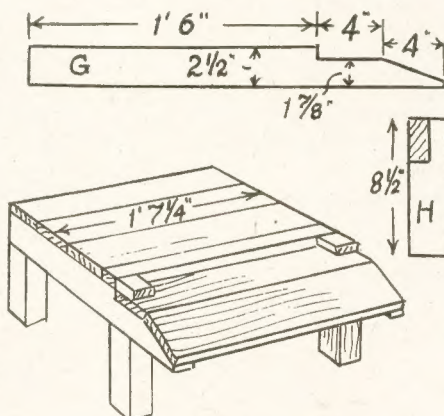


Fig. 3—The support stand

2 in. square wood. These are reduced at their tops to fit inside the side pieces at the stand, as at (H) and be there firmly screwed. The (A) portion of the hive can now be tested on the stand and should fit neatly on, its front resting on the corner blocks and leaving a narrow opening between for the bees to enter.

The length of the opening must be capable of adjustment, so two pieces of 1 in. wide wood, 10 ins. long each, are provided. These are seen in Fig. 4. To enable them to be pushed along to lessen the opening, a strip of wood is nailed to the front of the hive, above the strips, and a second piece nailed to that, wide enough to overlap the movable strips and keep them from falling forward. Now nail a board

across the porch brackets to cover the porch.

To complete the hive, a brood box must be made next. This is drawn complete in Fig. 5, and is quite a simple affair. The sides are cut from $\frac{3}{8}$ in. wood and the ends from $\frac{1}{2}$ in. wood.

These ends are fitted between the sides, just $\frac{3}{8}$ in. from the edges. It will be seen that the ends are less in height than the sides, and to them a $\frac{3}{8}$ in. square strip is nailed along. To complete this part, strips of $\frac{1}{4}$ in. wood $1\frac{1}{2}$ ins. wide, are nailed across to close the ends, as shown. The brood nest stands in the hive.

Cleaning and Painting

Clean up the work and punch nail heads down. Stop all holes level, and glasspaper the stopping, to leave no unsightly lumps. The outside of the hive and stand should receive three coats of best quality exterior paint. Do not be tempted to use any cheap stuff, as the chances are it will, under stress of wind and rain, just crumble off.

A real lead paint is best and gives longer service. The legs, especially the bottoms which stand on wet ground, should be painted or creosoted, as preferred.

Accessories for the hive, such as the sections which hold the honey, are better bought than made, and can be purchased

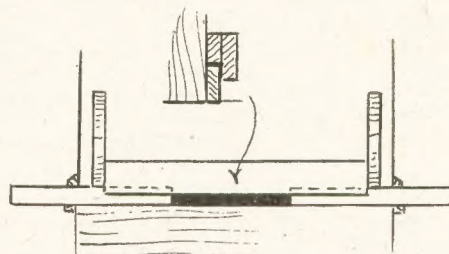


Fig. 4—Opening arrangements

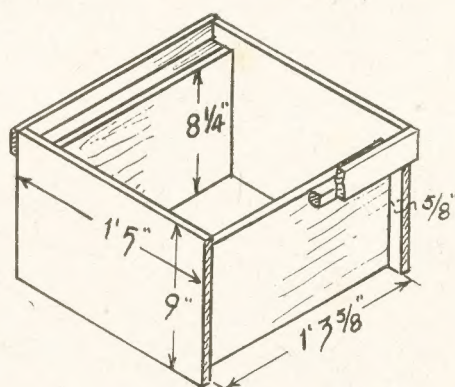


Fig. 5—Details of brood box

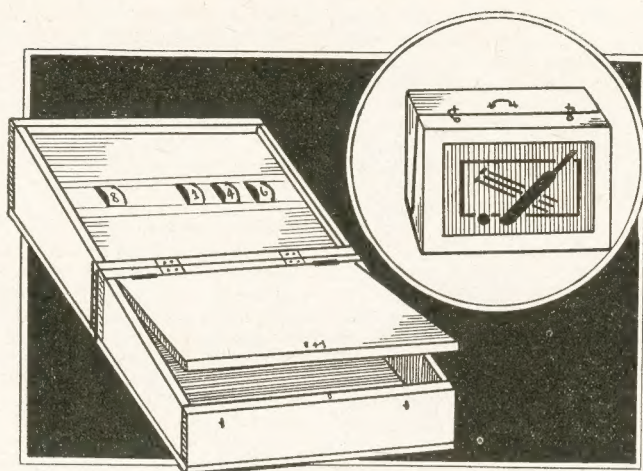
reasonably at any shops stocking bee-keeping accessories.

Keeping bees is a most fascinating and interesting occupation, apart from the production of honey. The lives and activities of the insects are amazingly intelligent and of great educational value to follow. Numerous books are obtainable by those interested in the hobby.

CUTTING LIST

- Section A (4) — $\frac{3}{8}$ in. by $8\frac{1}{2}$ ins. by lft. $7\frac{1}{2}$ ins.
- Section B (4) — $\frac{3}{8}$ in. by $6\frac{1}{2}$ ins. by lft. $7\frac{1}{2}$ ins.
- Section C (2) — $\frac{3}{8}$ in. by 3 ins. by lft. 9 ins.
- Section C (2) — $\frac{3}{8}$ in. by 5 ins. by lft. 9 ins.
- Roof (2) — $\frac{3}{8}$ in. by 12 ins. by 2 ft. 0 ins.
- Legs (4) — 2 ins. by 2 ins. by $8\frac{1}{2}$ ins.
- Stand sides (2) — $1\frac{1}{2}$ ins. by $2\frac{1}{2}$ ins. by 2 ft. 2 ins.
- Floor — $\frac{3}{8}$ in. by $4\frac{1}{2}$ ins. tongued and grooved board, 12 ft. run
- Rim strips — $\frac{3}{8}$ in. by $1\frac{1}{2}$ ins. 12 ft. run.
- Brood nest sides (2) — $\frac{3}{8}$ in. by 9 ins. by lft. 5 ins.
- Brood nest ends (2) — $\frac{3}{8}$ in. by $8\frac{1}{2}$ ins. by lft. $3\frac{1}{2}$ ins.
- Porch cover — $\frac{3}{8}$ in. by 5 ins. by lft. 7 ins.
- Remainder from scrap wood left over

An automatic scorer fitted into this novel CRICKETER'S CASE



THE Cricket Club Secretary and School Captain will find the little field outfit shown here extremely useful, and it is quite simple to make up with a few pieces of wood and the fretsaw. When opened out it provides a useful book rest for the scorer, and in the lid is incorporated a drum-type score counter. There is a handy compartment for keeping books, pencils, fixture lists, club rules, etc., all safely together, and the whole outfit shuts up into a neat case when not in use.

Of course, although primarily designed for the cricket field, the case can be easily adapted for any other game, by making suitable alterations in the counting device. In the sketch the dimensions have been kept to a minimum, in order not to need any very large pieces of wood. But if bigger pieces can be spared for the job, the size can be increased a few inches with advantage.

Alternatively, the case can be made up quite satisfactorily from stout cardboard, reinforced at the corners with wood strip as necessary. Measurements given allow for wood of $\frac{1}{4}$ in. thickness being used.

The Case

It will be seen that the case consists of two shallow boxes hinged together. The constructional details are quite simple and are shown in Figs. 1 and 2. The lid of the bottom portion forms the book rest, and is hinged to the case, the top surface when closed being flush with the top edge of the box, and resting on thin strips glued to the inside of the case.

The lid of the top portion is fretted, as shown at Fig. 3, to allow a view of the counting discs, and is screwed into position $\frac{1}{2}$ in. below the top edge of this half of the case. It will be seen that the strips forming front and back edges of the boxes are bevelled slightly, to coincide with the slanting sides.

The counting device consists of circular discs, similar to the tuning dials on many radio sets. Four circular pieces are required, $1\frac{1}{2}$ ins. diameter and $\frac{1}{2}$ in. thick. Wooden wheels as used for model making serve quite well if available, and save the work of cutting out the discs. Glued to each side of these discs are circular pieces of thinner wood $\frac{1}{4}$ in. greater in diameter, and the edges of these are serrated with a file to give the finger grip, as shown at Fig. 4.

Disc Spindle

A spindle of $\frac{1}{8}$ in. dowel is held fixed in the lid portion of the case, and these counting discs are bored to revolve on this. It is a good plan to bore the holes slightly smaller than the diameter of the

dowel, and finish off with a round wood-file, so that the discs are finger-tight on the dowel. They are prevented from moving sideways by pins through the dowel, as shown.

Fitting the Dials

It will be seen that three of the dials are placed together and one separate—the three to record the hundreds, tens and units of the score, and the one the number of wickets that have fallen. Glasspaper the discs until they fit the spindle nicely, but do not fix either discs or spindle into the case until the numbering has been done. To do this, first draw out on white paper four strips each $\frac{1}{2}$ in. wide and about $4\frac{1}{2}$ ins. long. Divide these into 10 equal sections, and number the sections 0 to 9 in bold figures with indian ink. Then glue the strips round the edges of the discs.

The spindle, with counter-discs at-

CUTTING LIST		
No. of pieces	Size	Description
2	$10" \times 7"$	Bottom and Top
2	$9\frac{1}{2}" \times 6\frac{1}{2}"$	Inside Lids
1	$10" \times 1"$	Front, bottom half
1	$10" \times 2"$	Back, bottom half
1	$10" \times 2"$	Front, top half
1	$10" \times 2"$	Back, top half
2	$6\frac{1}{2}" \times 2\frac{1}{2}"$	Sides, bottom half
2	$6\frac{1}{2}" \times 2\frac{1}{2}"$	Sides, top half
1	$9\frac{1}{2}" \times \frac{1}{8}"$	Dowel Spindle
4	$1\frac{1}{2}" \text{ diam.} \times \frac{1}{2}"$	Counter Discs
8	$1\frac{1}{2}" \text{ diam.} \times \frac{1}{8}"$	Counter Discs

tached, is glued into two blocks which are fixed on the inside of the top portion of the case. The measurements given allow for the top of the dials just pro-

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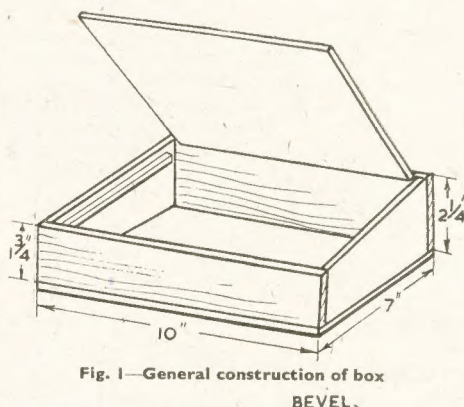


Fig. 1—General construction of box

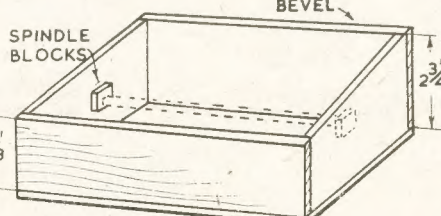


Fig. 2—End blocks for spindle rod

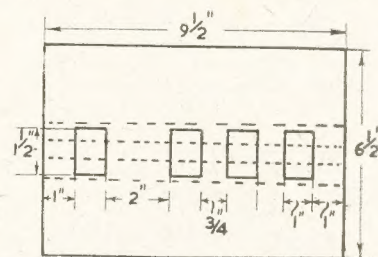


Fig. 3—Holes in top for score figures

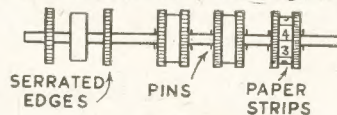


Fig. 4—Discs fitted to spindle

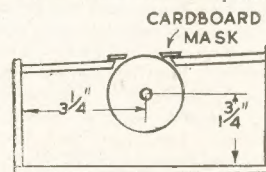


Fig. 5—Section showing position of disc with top

There is much of interest to learn if you make A CATERPILLAR CAGE

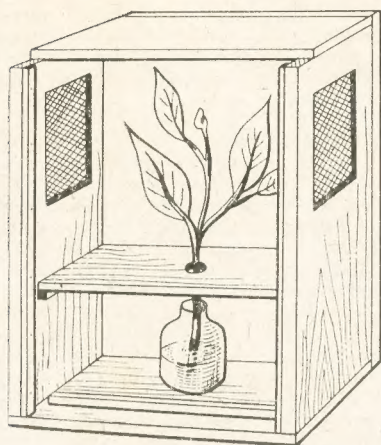


Fig. 1—The cage with glass front

THOSE readers who wish to keep silkworms, stick insects or other caterpillars, will find this cage ideal for the purpose. The glass front allows the habits of the caterpillars to be studied, and, over a month or two, the whole life history can be seen.

Fig. 1 shows the general construction and Fig. 2 the measurements. It can be made quite easily from any scraps of wood, but the sides should be at least $\frac{1}{2}$ in. thick, as the top, bottom and sides have to be nailed to them. If you use plywood you will need corner supports of thick wood, as used in the construction of tea chests.

Box Frame

The top is made $\frac{1}{2}$ in. smaller than the bottom to give room for the sliding glass front. For the front an old picture will yield suitable glass. Measure the inside width of the cage and cut the glass to size. For ease of sliding the glass should be about $\frac{1}{4}$ in. smaller in width than the cage. Next measure the length, leaving $\frac{1}{2}$ in. at the top for easy lifting. After cutting the glass, remove the sharp edges with a small file.

If you are not handy with a glass cutter, you should choose a piece of glass of suitable size, and build the cage to fit these dimensions.

Three small strips of wood are used to keep the glass in place, one on each of the sides and one along the bottom.

To fix the platform, nail on two supports 3 ins. from the bottom. Do not nail the platform itself to these supports, because it will have to be removed occasionally for cleaning purposes. In the centre of the platform bore a hole of $\frac{1}{2}$ in. diameter. The purpose of this hole is illustrated in Fig. 1.

Air and Water

In order to ensure an adequate air supply, cut sections from the sides and cover with perforated zinc, wire gauze or muslin material.

Place a jar containing water 'under the counter'. Insert the bottom of the stalk in water, and the plant will keep quite fresh until completely eaten by the caterpillars. To renew vegetation, remove the old stalk with the caterpillars still clinging to it, insert the new plant through the hole, then leave the old stalk leaning against the new one. The caterpillars will transfer to the new food, when the old stalk can be discarded.

A wad of cotton wool placed round the plant stalk will prevent caterpillars crawling or dropping through the hole.

Suitable Silkworms

Now, having made a nice new cage, you should look round for some victims. Silkworms are popular, and are extremely interesting. You can obtain a supply of eggs quite cheaply, and they will hatch out in a few days into tiny caterpillars. They feed on lettuce or mulberry leaves, which should be spread along the platform of the cage.

Stick Insects

Stick insects are fascinating, too. They are camouflaged by nature to appear like pieces of twig. Privet leaves comprise breakfast, dinner, tea and supper for these caterpillars. If you wish, the Editor can supply you with the address of a firm supplying eggs of silkworms and stick insects.

The budding naturalist will also look for eggs of other caterpillars in the countryside. These will be found either singly or in groups, attached to the underside of the leaves for protection

against enemies and the sun. The whole stalk should be removed and placed in the cage.

Remember, that if you find eggs on a nettle leaf, it is no use trying to make the resultant caterpillars eat potato leaves. A leaf that has been nibbled will tell you that caterpillars are at work—probably well camouflaged, of course.

Moths to Obtain

The largest British moth is the Death's Head Hawk Moth, and is to be found only on the potato plant. A bed of nettles will probably yield specimens of the beautiful Peacock Butterfly caterpillar, which is black and spikey. Caterpillars of Red Admirals enjoy nettles, so do 'Woolly Bears', which later turn into pretty Tiger Moths.

A privet hedge that is not trimmed very frequently (perhaps even your own) may yield the Privet Moth caterpillar. Similarly, the Poplar Moth can be found in poplar trees, whilst the willow provides a home for the Elephant Hawk Moth. These three moths just mentioned have a wing span of more than 3 ins.

Pupation

At a late stage in the life of a caterpillar you will probably see it leave the food plant and wander round the cage. This shows that pupation is going to take place, that is, the caterpillar is going to turn into a butterfly or moth, as the case

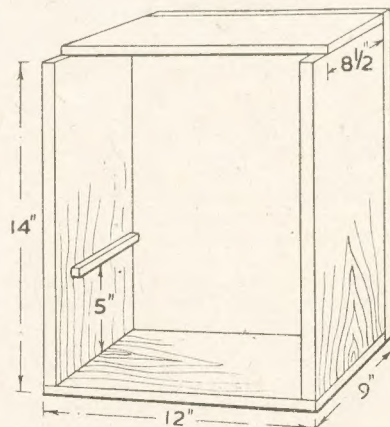


Fig. 2—Dimensions of a suitable box

may be. Since most moths like to pupate under soil, you should place a small tray of soil of sufficient depth in the cage.

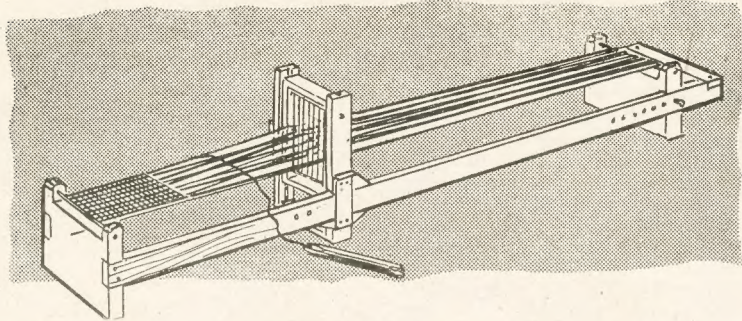
Butterflies pupate either on the floor of the cage or on the plant itself. Silkworms spin for themselves a cocoon of very fine, coloured silk. A silkworm will be grateful to you if you provide a conical, paper bag in which to pupate.

On emerging from the pupa stage, the winged butterfly or moth has but a brief spell of life, then it lays its eggs, and dies, and the cycle begins again. (191)

A Book for Keen Cyclists

The Kuklos Annual is now regarded as essential to touring cyclists as any spare parts, and the value of the 1950 Edition is as great as ever. No reader could help but be a better cyclist after perusal. There are a number of features giving practical advice on the choice of lightweight machines, physical fitness, training, foods, etc. The Foreign Touring section contains some new routes and covers all European countries where cycling is practicable, with the latest currency and other arrangements. With its Resthouse List, Road Records and Gear tables, etc., it is good value for 2/9 post free from the Publishers, whose address is in our advertising pages.

Lengths of stuff up to 3ft. long can be woven on this USEFUL SMALL LOOM



WEAIVING being a popular craft now, the small loom, illustrated, may excite some interest. It is capable of weaving anything narrow, up to a limit of 3ft. long, such as ties, dress bands, pyjama cords, and quite a lot of things. It has been designed, however, for two other purposes.

Firstly, as a method of trying out new patterns in simple tabby weaving before attempting such on a larger loom, and secondly, as a source of interesting work to a youngster, who with a ball of wool or yarn, could amuse himself making different patterns and small articles, without undue waste of material.

General Construction

Fig. 1 shows a side and front view of the loom. It consists of two warp carriers (A) and (D) connected together at an arranged distance apart by the horizontal bars (C). Warp carrier (A) is fixed, but carrier (D) is capable of being slid along the bars. Dealing with the warp carriers first, both are alike and are made of $\frac{3}{4}$ in. thick wood to dimensions shown in the front view. In the side edges grooves are cut into which bars (C), which are cut to length from $\frac{1}{2}$ in. by 1in. wood, can fit.

At the top cut out a piece $\frac{1}{2}$ in. deep and $4\frac{1}{2}$ ins. long. In the projecting ends now sticking up bore $\frac{1}{8}$ in. holes through, into which, as a tight fit, $\frac{1}{8}$ in. steel rods can be pushed. On these rods the warp threads are tied. Fix carrier (A) to the bars at the front end with countersunk brass screws.

At the opposite end reduce the bars to $\frac{1}{2}$ in. and fit across a bar (B) to keep them

parallel. Screw this bar across for removal at any time. Fit carrier (D) between the bars, and see it can be slid along fairly easily. To keep it at any desired distance from (A) bore a few $\frac{1}{8}$ in. holes through bars (C) and a similar hole in carrier (D). A pair of mild steel split pins can be pushed through the holes, and should hold the sliding carrier firmly enough.

A few holes are bored at the end rather close together, so that when weaving to the limit of length, should the warp threads become rather too taut, the carrier can be slid to a hole nearer the front to ease it.

Heddle Frame Slides

For the heddle frame a pair of slides are necessary, for it to be raised and lowered, to separate the warp. One of these slides is shown at Fig. 2. It consists of a piece of $\frac{1}{2}$ in. wood, $\frac{3}{4}$ in. wide, with two strips of $\frac{1}{8}$ in. wood glued to its inner face, leaving a central groove in which the heddle pins move.

The slides are fitted with pieces of $\frac{1}{2}$ in. thick wood on their outer faces to move along the bars (C) as required. Note here that the upper of these wood pieces, let us call them guides, is shorter than the lower one, so that it does not interfere with the passing of the shuttle.

Both pieces are bridged by a metal strip, passing over bar (C) to keep the slide in position. Fit these in place, as seen in the side view of the loom, Fig. 1, then join them together across the bottom with a $\frac{1}{2}$ in. by $\frac{3}{4}$ in. piece of wood, with small triangular strengthening fillets in the corners. Fig. 2 shows these items. Now test the slides to see

they move together as one piece along the bars.

Heddle Frame

The heddle frame, Fig. 3 (F) is made to the dimensions given from $\frac{1}{2}$ in. by $\frac{1}{2}$ in. fretwood, glued and nailed together. Make it firm and square at its angles. At $\frac{1}{2}$ in. down from the top and $\frac{1}{2}$ in. up from the bottom bore $\frac{1}{8}$ in. holes for pieces of steel rod to fit across, on which healds, which carry the warp, can be set.

Near the bottom, on the outside, drive in a $\frac{1}{2}$ in. brass screw, partly. File off the head, leaving a pin just a shade under $\frac{1}{2}$ in. long, as at (b). A second and similar pin is fitted higher up at (a), at about $\frac{1}{2}$ in. from the top. Of course, these pins are fitted each side, and should move in the grooves of the slides (E). Try this out.

It will be noticed here that only one heddle frame is provided, but the necessary opening for the shuttle to pass through is provided by pulling the same warp threads up and then pushing them down, and simplify the business. The healds, which carry the warp, are made of fine steel wire, the kind which is sold in small coils for a few pence at hardware stores.

They must all be made alike, so a gauge for the purpose is made, as shown at (G). It is a piece of deal or hardwood, with holes for rods exactly the same distance apart as those in the heddle frame. In the centre of these a groove is sawn and chiselled out of the wood.

The Healds

To make the healds, cut a suitable length of the wire and pass it over and across the rods, twisting the ends underneath. Between the wire push a small nail, say, a 1in. wire one, and twist until the heald is formed, as at (H).

Then slide off the rods, and repeat until a sufficient number have been made. The rods in the heddle frame are then partly withdrawn, and the healds threaded on. For each weaving job the number of healds necessary will be just half the number of warp threads. Now for a test of the loom.

Cut a few threads the length of the loom, plus, say, 4ins. for tying. Tie the threads to the rod in carrier (A). The first thread is pushed through the loop

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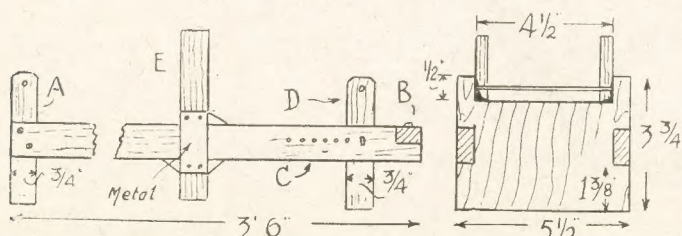


Fig. 1—Front view and end detail of main parts

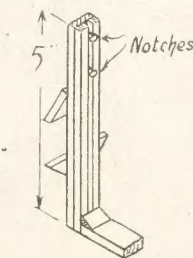


Fig. 2—The slides

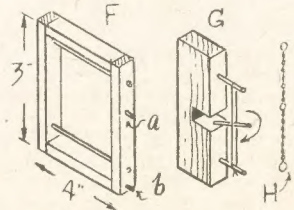


Fig. 3—The heddle frame

For moderately heavy work in model making have this HOME-MADE VICE

It can be truly said that not every model maker boasts the possession of a vice which will really grip small items in a satisfactory way, unless he owns a professionally-made tool. These are usually quite expensive, and would demand a cash outlay which might well be spent on many more spectacular items of modelcraft.

It was the dismemberment of a 3ft. spring mattress which gave the writer the idea outlined in this article, and the whole of the material needed for the construction of the vice is to be found in such a piece of discarded furniture, with the exception of a 4in. steel butt hinge, which then represents the sole outlay.

A Spring

The steel spring was first removed

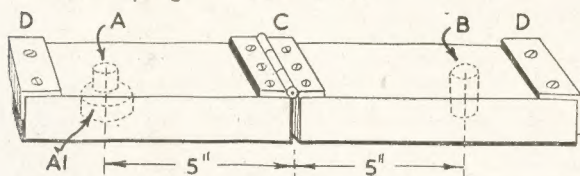


Fig. 1—The tool flat and hinged

from the woodwork of the mattress, and the two tensioning screws extracted—with their nuts from the lower transverse beam of the frame. The nuts can be driven out by hammering on the heads of the bolts.

After the four main wooden members are all free, two 8in. lengths are cut off as shown in Fig. 1, and holes drilled to clear the threads of one of the mattress tensioning bolts. The hole (A A1, Fig. 1) should be recessed on one side to receive one of the nuts. A rough idea of the size of hole required can be formed by looking at the original hole in the bed-frame.

The two 'jaws' of the vice—as the pieces of wood have now become—are joined at their lower extremities by the 4in. hinge (C) and two pieces of angle iron (D-D) are fixed with countersunk wood-screws at the top ends to act as working jaws. In the writer's vice these pieces of angle-iron were cut from Anderson shelter material with a hack-saw and filed truly square in every direction.

A thick washer—also from shelter material—is placed between the head of the bolt and the wood face of the moving jaw (W, Fig. 2) and a piece of ½in. strip mild steel or other material (S) is wrapped around the bolt head to form a handle for the bolt. This handle is bolted

work bench by the two countersunk wood screws (Fig. 2) which should be not smaller than No. 12's, 4ins. long, round-headed and screwed in with a washer under their heads to stop the wood splitting.

Jaw Protection

A pair of ½in. thick aluminium overlays for the jaws will be found a useful adjunct to the tool, as with them the gripping of threaded and delicate items becomes quite easy, no damage of any kind being done to the threads, even if

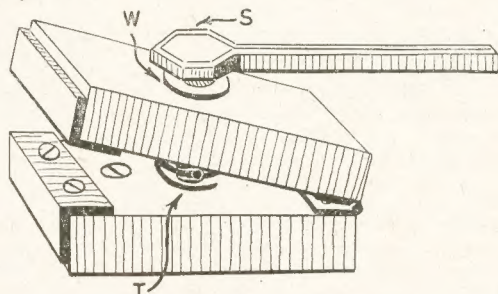


Fig. 2—Closed and in use

together with ⅜in. Whitworth bolts as shown.

Lubrication

An old motor car engine valve spring should be inserted where shown (T) if possible, to return the jaws to the open position.

Liberal lubrication of the thread and nut with really heavy motor oil is essential to smooth working, and the tool will be found capable of exerting a really strong grip on items of wood or metal without damaging them in the process.

The tool is fastened to the front of the

the latter are of brass or other soft substance.

Hint for Use

If the top angle irons of the jaws are arranged to be perfectly square, both in relation to the frame of the vice and to each other, it will be found possible to file parts to a dead square right-angle by merely sweeping the file across the work till it beds evenly down on to the vice jaws. This is not the orthodox way of filing square, but is a very useful tip for the home model craftsman, who often considers the 'end' rather than the 'means'!

(176)

Cricketer's Case—(Continued from page 195)

jecting through the top piece of wood, when this is added (see Fig. 5).

In order to get them up as high as possible, for easy reading, it is necessary to cut out bigger slits in the top board than is otherwise necessary, and also to taper the edges of the slits a little, as shown. A thin sheet of card, with smaller slits, is then glued over the top, to cover up all but the figures on the dials and the top serrated edges of the drums, for the fingers to push them round.

Assembly

Fix the lid portion to the bottom half with two neat hinges, and add a small fastener at the front to prevent it opening accidentally. A tiny screw acts as a knob for lifting this up to get at the inside of the case. Then hinge the top half to the bottom half.

In doing this it has to be borne in mind that the top half is required to lay

right back flush with the bottom half, and consequently the hinges must be narrow enough to let in on the top edges of the wood, or some other kind of hinging employed, such as gummed tape if the case is made up of cardboard.

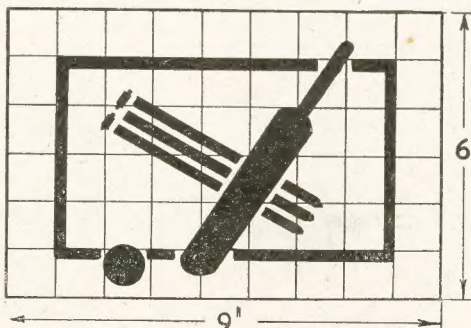


Fig. 6—Suggested design for lid on lin. squares

Finishing Off

A suitable cricket design for the lid is shown, ruled in 1in. squares (see Fig. 6). This can be either drawn on to the lid and then painted in, or cut as an overlay and glued on, whichever is preferred. Other appropriate designs (such as incorporating the name of the team) will suggest themselves to the handyman with artistic ability, and the more elaborate this can be done the better the finish to the case.

Finally, paint or stain the rest of the case in contrast to the design, add two small fasteners at the front to hold it shut, and a neat handle on the top edge, for carrying. Then you have a splendid case for use at your cricket which will make scoring additionally interesting.

(169)

The craftsman will find it worth knowing about SOME SECRET DRAWERS

THERE is always something thrilling about the words 'secret drawers', and these form the theme of many a romantic story. Those readers who like to make their own furniture may care to incorporate a secret drawer. It is hardly possible to describe, in dimensioned detail, any particular secret drawer, as everything depends on the piece of furniture in question, and no two cases will be quite alike. We can, however, describe secret drawers in general, so that readers, having got the general idea, can plan a secret drawer of their own.

Some call for craftsmanship of a very high order, but others, such as illustrated in Fig. 3, are well within the range of the average reader. But, first of all, what is a 'secret' drawer? The present writer has examined a great number of those drawers and has come to the conclusion that very few are really secret.

Movable Moulding

Take for example, a very well-known case, illustrated in Fig. 1. It will be seen that by pulling a piece of moulding by the stationary racks in a bureau, a thin, upright drawer is revealed, much in the manner of taking a book from a shelf. Since this type of thing was fitted to a great number of bureaux, it can hardly be called a 'secret' drawer. Rather would the writer call it a 'concealed' drawer.

Some cabinet makers were well aware of this, and occasionally one finds a secret drawer within a secret drawer. As Fig. 2 shows, a person might use the concealed drawer for years, without being aware that there was another compartment at the bottom of it.

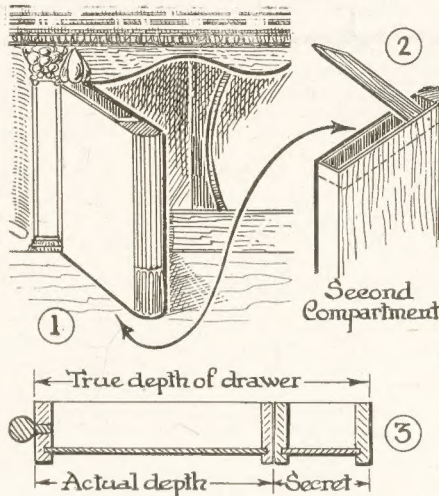
Another example of concealment, rather than of secrecy, is depicted in Fig. 4, where a fine semi-circular ebony pillar can be slid aside to reveal a keyhole.

It would have spoiled the look of the cabinet to have the pillar pierced by a keyhole.

The Simplest Form

Perhaps the simplest of all secret drawers is to place a small drawer behind a large one (Fig. 3). This is obviously the most easily detected, as one has only to compare the depth of the drawer-well with the external depth of the bureau.

Sometimes these drawers were fitted

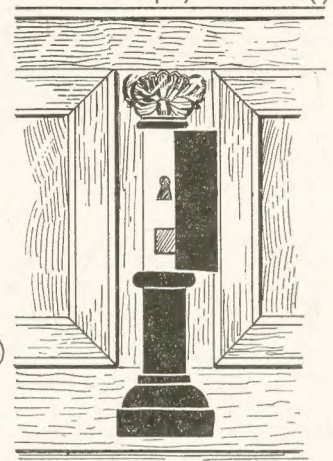


with a little tab of tape, so that they could be withdrawn. This, however, would have declared their presence too readily, so they were often withdrawn by using a pin and a pair of pliers. The pliers pushed the pin in the drawer, and then gently withdrew it. All secret drawers, of course, were made still more secure by being fitted with a secret lock or catch. Others could only be opened from the back, which meant turning the heavy piece of furniture right round.

Fig. 5 shows a secret compartment of a

different type. It is an eighteenth century Dutch wardrobe, and a massive corner can be swung open to reveal a set of four small drawers (Fig. 6).

Another fine piece of work is that of the mahogany drawing table, made about 1770 (Fig. 7). At first sight it would seem that there were five partitions there (lettered a-b-c-d-e in the drawing). As they only extend half the depth of the well, it seems obvious that the space underneath is taken up by the drawer (f).



Sliding Ebony Pillar

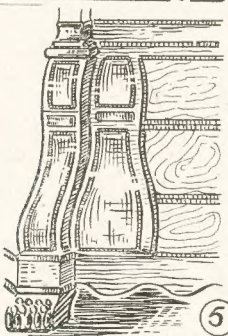
The truth is that this drawer only extends half way. The partition (d) can be swung out through a hole cut neatly in the side. This done, another drawer (g) can be opened.

There is one very great drawback to this otherwise ingenious arrangement. It will be noted that the front edge of (d) is curved. It could not be swung out otherwise. This leaves a most suspicious curved space amid a nest of rectangular compartments.

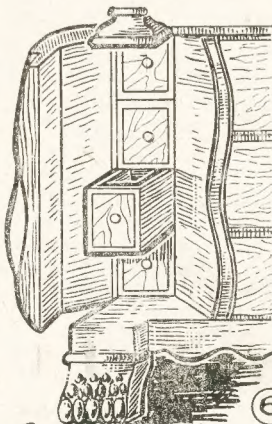
Other places where secret drawers are to be found are in the arched tops of pigeon-holes and other recesses or

(Continued foot of page 200)

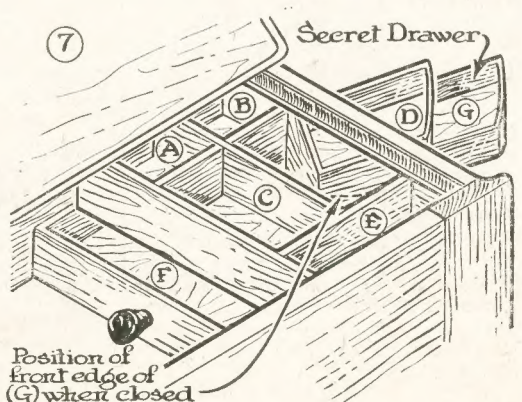
18th century
Dutch Wardrobe



Appearance when
shut
(Drawn to reduced scale)



Corner
swung open to show
secret drawers



Position of
front edge of
(G) when closed

The summer is a good time to undertake CURING DAMP WALLS

MANY of us are too well aware of the hopelessness of painting, distempering or papering a room, the walls of which are damp. A very urgent necessity in such cases is to find out the cause of such dampness and cure it, if possible. When the dampness is apparent only on the ground floor, the upper floors being less affected, have a look at the base of the wall outside.

The damp course may be at fault or, perhaps, the earth against the wall is above the course. In either case remove the earth to below the course, scrape out a little of the mortar between the bricks, and lay on a $\frac{1}{2}$ in. thickness of cement mortar to a height of some 12 ins. above ground level.

Double Application

Do not lay on the cement to the whole thickness at one operation, or its weight will tend to pull it away from the wall. A thickness of $\frac{1}{2}$ in. should be applied first, and its surface scored lightly with the tip of the trowel in diagonal lines. Then, when this is hard, the final layer of $\frac{1}{2}$ in. can be laid on. This may effect a cure.

If the dampness is only on the upper parts of the wall, it may be due to the pointing between the bricks having fallen out, or to being exposed to heavy driving rain. In the latter instance, and supposing the pointing to be in good condition, a weather resisting wash will help. Proprietary preparations for this may be bought at the oil shop. Granger's solution for example, or the following simple cheap remedy tried out.

Rub the bricks well down with sandstone, wet with cement and water, then paint them with a solution made up with 1 gal. boiling water in which $\frac{1}{2}$ lb. of mottled soap has been dissolved. After 24 hours, paint over with a second solution of 2 gals. hot water and $\frac{1}{2}$ lb. of alum. Repeat this treatment once each season, for a time, at least.

Defective Pointing

If the pointing is clearly defective, then the job of repointing should be undertaken. This can well be effectively done by an amateur. The only tools needed, bar the trowel, are a simple appliance for holding the mortar, shown at (A), in

Fig. 1, being a 10 in. square of board, with a short piece of broomstick nailed to it underneath for a handle; a piece of iron $\frac{1}{4}$ in. wide, with one end bent at right angles and sharpened, as at (B) for scraping the old pointing away between the bricks, and a strip of wood, $1\frac{1}{2}$ ins. wide and $\frac{1}{4}$ in. thick, for a straight edge (not illustrated).

The Mortar Mix

First scrape out the old pointing well between the bricks to leave ample room for the new, with the iron tool. Then dust out. Mix the mortar on a board, not too much at a time, in case it sets before it can be used. The mortar is a mixture of clean sharp sand and cement, in the proportions of 3 parts of the former to 1 part of the latter.

Heap a quantity on the holder and, with the trowel, press it well between the bricks. Draw the trowel along it, holding the trowel at a slight outward angle, so that the mortar is a trifle below the level of the upper bricks and protrudes a little beyond the lower bricks, as shown by line (a-b) in Fig. 2.

Clean Work

Now, place the straightedge over the line of pointing, and draw the tip of the trowel along its bottom edge, as in sketch, Fig. 3, to trim the pointing and leave a clean straight edge. The vertical pointing is done meanwhile and is pressed well between the bricks, slightly beyond the level of them, and has its side edges neatly trimmed with the trowel and straightedge. The sectional view, Fig. 2, shows how the repointing should be applied horizontally, and should help to make the foregoing instructions quite clear.

Inside the room it is wise to light a fire for a few days to help dry out the wall, before attempting to re-decorate. If the damp has rendered the plaster soft, so that it tends to break away from the wall it is practically useless, and should be scraped away. No use trying to dry it out. When the old stuff has been removed, any loose fragments and dust should be brushed away.

The wall should then be scraped, and a coating of cement mortar applied, mixed as for pointing. Lay on the coat to within $\frac{1}{8}$ in. of the former thickness, to

leave room for the finishing layer. Score with the trowel to provide a key to assist in the adhesion of the subsequent coat.

Top Dressing

Let this dry out, then apply a thin coat of parian cement to bring the repair to the level of the rest of the plaster. Smooth the surface with the trowel, or if the area is rather large, with a float of home construction, a piece of smooth board, 3 ins. wide and 9 ins. long, with a

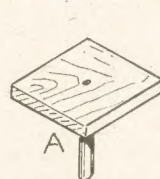


Fig. 1—The mortar board and picker

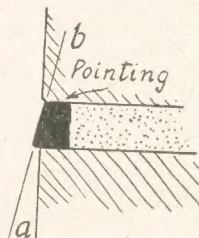


Fig. 2—Cement shape

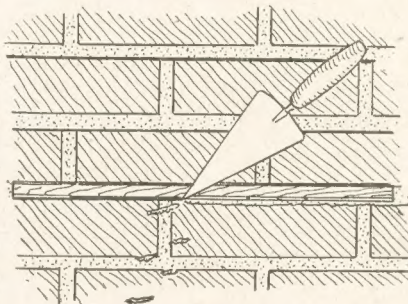


Fig. 3—Straightedge for cutting level

handle for manipulating it. Bevel the edges of the float, and well damp the surface of the plaster to assist smoothing action.

Should the plaster, despite its damp condition, dry out fairly well, and be still sound, then it can be painted over with one of the proprietary damp resisting compounds, Grangersol, Stet, or others advertised, or given a coat of silicate of soda (water glass). After this treatment the walls should be in a fit condition for papering or distempering, as preferred. (185)

Secret Drawers—(Continued from page 199)

alcoves. The writer, grasping the convex moulding of a secretaire whilst putting up Christmas decorations, lost his balance somewhat, and gave the moulding a sharp jerk. To his surprise the moulding pulled out, and was found to be the front of a large, shallow, tray-like drawer.

It is, of course, quite impossible to tabulate all the varieties of secret drawers, since the designer took advantage of whatever opportunities presented them-

selves in connection with the particular piece of furniture he was engaged upon. The late seventeenth and the eighteenth centuries were the great ages of the makers of secret drawers, though specimens are met with before and since.

All the examples mentioned in this article have been selected from actual pieces, in many cases on view in public museums, such as the Victoria and Albert, South Kensington, and the Geoffrye Museum, Shoreditch, as well

as large museums in the provinces.

Naturally, the authorities do not encourage people to probe the choice specimens for possible secret drawers, but if one is interested in the subject, and writes to the chief curator or director of the woodwork department to this effect, it is usually one's pleasant experience to have the curator give orders for the necessary pieces to be pointed out, unlocked, and explained. (151)

An attractive addition to the sideboard is this FRUIT HOLDER TROUGH

OUR picture here shows an attractive piece for the sideboard—a fruit trough or basket. Many forms of trough may be designed, but we think the one shown is, perhaps, the most useful in shape when it comes to the handling of fruit. The article consists of two ends, a wide back and a narrow sloping front, all fixed to a stony floor.

It may be suggested here that the front be of Perspex instead of wood. This material would give a rather good effect and if adopted it requires the grooving of the ends so the Perspex may be slid into place. On the outside of the ends some form of decoration might be added such as shown here.

This decoration may consist merely of fretted overlays simply glued on, or it may take the form of stain and colour laid on with the brush. Again, the decorative panel shown may be in two or more coloured woods and cut as an inlay and glued up and rubbed down and finished with polish.

Ends

The ends should be the first parts to make and two good flat pieces of $\frac{3}{4}$ in. wood each measuring 7 ins. by $6\frac{1}{2}$ ins. should be chosen for them. Over one piece of wood draw a number of squares, as shown in Fig. 1, in light pencil lines. Then through each follow the outlines, taking the diagram as a guide. The dotted interior line may also be drawn in to give the true position for gluing on the overlay.

Pin points should be pricked along this line so that when the surface is later cleaned up with fine glasspaper the points will still show to which the overlay may be glued. When the outline has been cut round with the fretsaw and

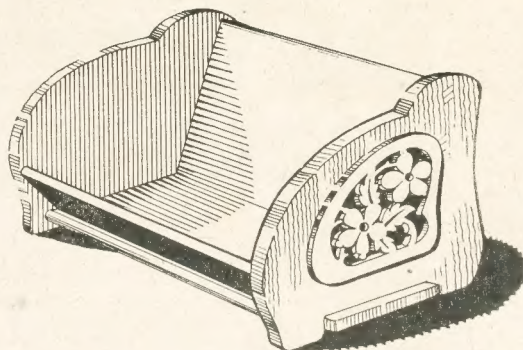
the edges cleaned up with glasspaper, the piece should be laid on the second piece of wood and a line drawn round it in template form. This second piece will be cut and cleaned.

Note, in making the first enlargement of the end include the dots shown on the 'copy' Fig. 1 which indicate where the wood dowels or the screws go for fixing the sloping back and front. The floor will take the form shown in Fig. 2, and this again consists of a piece of $\frac{3}{4}$ in. wood. Note here the width and the length of the tenons so they fit accurately and neatly into the recesses of the ends to which they will be glued and screwed. The circled diagram in Fig. 2 shows the floor being fitted into the recess.

Back and Front

When the ends have been fixed the back and front can be taken in hand. For the back, a piece of $\frac{3}{4}$ in. stuff will be wanted either 12 ins. or 14 ins. long as desired, and according to the length of the floor and 5 $\frac{1}{2}$ ins. wide. One edge of the piece will be rounded off and made smooth with fine glasspaper. The lower edge must be planed to a chamfer to fit on to the floor, seen in Fig. 1.

When this is done fit it into place at first where it is to go. Then prick in through the holes on the ends to mark where the dowels or screws will later be inserted. After this put a little glue on the end grain, not too much so that it will squeeze out. Fit it finally in place and drive in the fixing screws or the wood dowels. The sides of these should be



wiped with glue to make a secure fixing.

The front of the article is next made. This will also be $\frac{3}{4}$ in. thick and cut to the same length as the back. The rounding and chamfering to the edges will be repeated and carried out in a similar manner to the back. The fixing to this piece will also be similarly done.

Decorative Panels

In Fig. 3 we see in detail the decorative panel suggested for the ends. The squares here are shown $\frac{1}{2}$ in., and they must be drawn out on to paper full size and a careful enlargement made by following carefully the lines as they run through the squares. The pattern will be stuck down to thin wood and cut out in the usual fretwork manner.

By nailing two pieces of the thin wood together both overlays may be made by the one cutting. Clean up the surfaces, carefully gluing the overlays to the ends, and see that they are in true position according to the pin-pricks mentioned previously. A suitable finish to the article would be french polish, although much depends upon the kind of wood used.

If a Perspex front is to be used, stuff $\frac{1}{4}$ in. would be found useful. Grooves slightly above this thickness must be made in the ends, before, of course, they are framed to the floor. Mark off the grooves accurately and saw down the sides with a fine tenon saw, cleaning away the waste wood with the chisel.

Plastic work is of course of a different character from ordinary woodwork, and there are several books available on the subject, if the worker intends to undertake the subject properly.

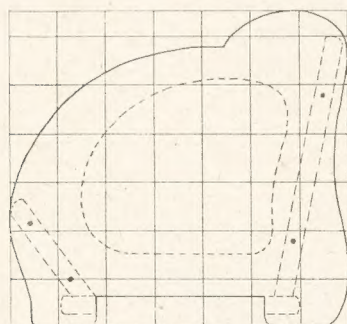


Fig. 1—Outline of end, with adjoining positions shown dotted

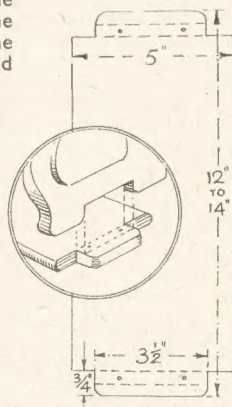


Fig. 2—Rail and joints

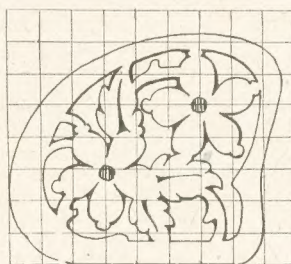


Fig. 3—End decoration

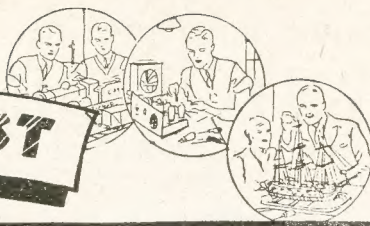


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REPLIES OF INTEREST



Selections from our replies to readers' problems we receive on a variety of subjects relating to Hobbies generally.

Re-silvering Mirror

I HAVE a mirror which has become speckled owing to damp. What procedure and materials can I use to re-silver the back of this? (E.A.W.—Louth).

THERE is no practicable way of removing 'speckling' from a mirror, except to have it re-silvered. The method of doing this is somewhat complex, and as a practical matter it would probably be more economical to have the work done professionally. For your information, however, the following is the general procedure. First clean the mirror of every trace of old silvering, and finish by cleaning with alcohol or some similar spirit. Unless the glass surface is absolutely clean and free from the

treated as described, are then mixed in the proportions of two of (A) to one of (B), and poured over the plate to be silvered—which must, of course, be perfectly level, and located in a sufficiently large dish or container. Gently rock the plate, the solution turns a muddy brown at first, but in two or three minutes or so it clears and in five to six minutes, a thick deposit forms. Pour off the solution and wash thoroughly, removing any streaks of precipitate by wet cotton wool very gently applied. Wash several times with alcohol, dry by means of a warm air fan, and finish by painting with one or two coats of shellac varnish and a finishing coat of red lead paint.

Melting Records

I HAVE a large collection of gramophone records which I feel would be a waste to throw away or burn. Is there a method of melting them down into a sort of varnish? (K.P.—Royton).

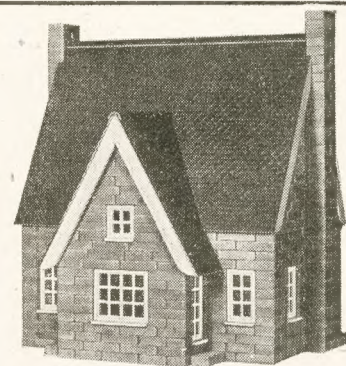
BEFORE destroying your very old records, it would be worth while offering them for sale to the B.B.C. or to the Gramophone Co., as some old titles are now unobtainable, and collectors might welcome them if by any chance you had any titles that are not readily available. To melt down the records, it is merely necessary to raise their temperature, when they will melt. Do this very carefully, as the material contains much resin, wax and other highly inflammable ingredients. To convert this melted material into varnish will call for some amount of experimentation, but try a small quantity first. Bring to the molten stage, then add a small quantity of linseed oil, about twice as much copal, and then add terebene—as much as needed to act as a drier and cause the varnish to set and harden in, say, about eight hours. Be very careful not to have a naked flame anywhere in the vicinity, or a serious fire may occur. Strain the molten record material, and remove all dross before attempting to make your varnish. After all your efforts, the result may be unsatisfactory owing to the fact that the composition of the material in detail is unknown.

Meteorology

IS there any way of explaining meteorology as a hobby to boys' clubs without being so weighty on it? (B.K.—Dulwich).

WE suggest you get in touch with the Controller of the Meteorological Office, The R.A.F., Kingsway, London, W.C.1, who would, no doubt,

be able to give you a great deal of assistance and advice on the subject of meteorology. For our part, we suggest you work along the general lines of comparing old country weather sayings such as 'red sky at night', etc., with the state of the clouds, temperature, wind speeds and so on. You could then explain the barometer, and how wind speeds are measured, then work up to the more scientific aspects of the subject.



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slightest trace of grease or dirt, the re-silvering will be a failure as specks of foreign matter will show up. Prepare a solution (A) made up of 100 parts distilled water, 10 of loaf sugar, 10 of alcohol and half of commercially pure nitric acid. Prepare a separate solution (B) one part silver nitrate dissolved in 10 parts distilled water, then add strong ammonia until the brown colour in the solution becomes clear. Then prepare a solution of 3 parts of potash (purely alcohol) and 10 parts of distilled water. Add this to solution (B), then add ammonia until the solution is again clear. Another solution consists of 1/8 part silver nitrate in 8ozs. of distilled water; this is added to the previous solution until the liquid becomes straw coloured. Then filter this solution. Quantities of Solution (A) and the Solution (B),

Books to Read!

A review of interesting books for craftsmen which have been recently published. Obtainable through newsgagents or book-sellers or direct from the publishers mentioned.

Nets

by G. A. Stevens

NETMAKING may not at first sight appear to be everyone's hobby, but a little thought will soon prove how worth-while such a knowledge can be. This book, for instance, tells you how to undertake string bags for carrying tennis balls, bowls, etc., a garden hammock, a shopping net, a netball goal net, a tennis net, etc., and sometime or other any one or more of these becomes a vital necessity. But the book does more—it tells you the whole story. Commencing with general principles, types of needle and loading, the methods of making are clearly shown. The editorial is large, easy to read and follow, and the drawings are unusually easy to understand in their stage-by-stage progress. The author is an experienced man of the sea himself, and knows exactly the questions and answers to a very varied subject. Actual size of cord is shown and there are chapters on net making of all kinds, mounting, mending, preservation, knots and bending. We are occasionally asked by our readers to recommend a book on Net making, and now we know a really good one.

Published by Routledge and Kegan Paul Ltd., 68/74 Carter Lane, E.C.4.—Price 5/-

Flower Pressing

by S. Francis Blackwell, B.E.N.A.

A DELIGHTFUL book for summer use to help with any country walk as a reminder of happy days well spent. How little we realize the beauty of nature around us, and particularly in every flower we find—whether in our own back garden, in the local park, or in the real open country. What a fascinating interest there can be in collecting and preserving these varieties is shown in this large stiff cover book with its colour pages, drawings, botanical pressing paper, identification charts, etc. There are 38 wild flowers illustrated in colour, a flower calendar, with clues for finding, collecting, pressing and mounting specimens. The book provides the unusual hobby for outdoor and indoor occupation—gathering the flowers on your country walks and preserving and mounting them in the home later on.

Published by Medallion Press Ltd., 5 Dowgate Hill, E.C.4.—Price 3/6

Our Railways

by Alan F. Shoults

ACHEERFUL and colourful little book for the youngster, original in style, and pleasing in content. Each page contains a bright picture of some phase of the railway system, and on the

facing page is a poem relating to that particular activity. The personalities and places of the vast organisation are dealt with in a charming manner, the combination of picture and poetry proving an instructive, as well as picturesque sequence and combination. Published by Edgar Backers, 49 Cank Street, Leicester—Price 2/6

Woodwork Joints

by Charles H. Hayward

THE name of the author is sufficient guarantee that the book is a veritable mine of information, and one that should be in the hands of every keen carpenter or home handyman. The range of joints used in professional woodwork is really amazing, but the book deals with them all. The amateur, true, is seldom likely to require to make a knuckle joint for instance, or a scarf, fishplate or bridle joint, but the keen student who really wants to learn should certainly know about them to his advantage. The book is of 168 pages, profusely illustrated, even to having diagrams on its inside front and back covers. It can be thoroughly recommended to anyone in the woodworking

trade, to home craftsmen, handicraft masters and students who propose devoting their life to the worth-while job of carpentry.

Published by Evan Brothers Ltd., Montague House, Russell Square, London, W.C.1—Price 7/6

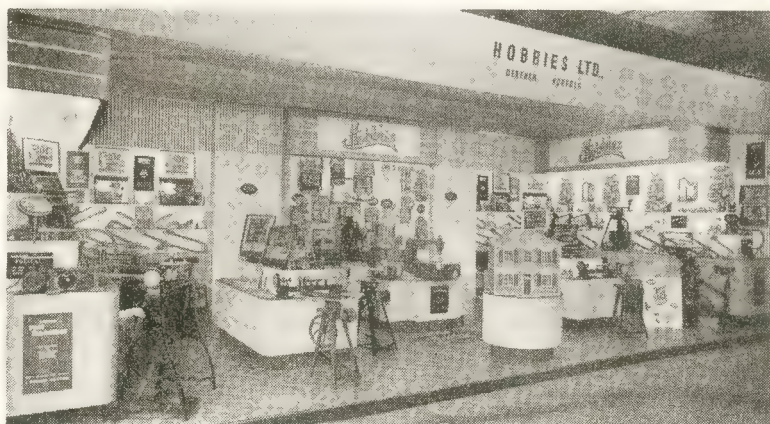
Postage Stamps

by L. N. and M. Williams

THAT fascinating subject, Philately, is undoubtedly increasing in popularity, and it is a fallacy to think that it appeals only to younger people. We know a wide variety of people of mature age who are thrilled by the pastime and the pleasure it affords. This book is one of the Puffin series, and, as might be expected, is authoritative, interesting, and good value. Its large pages are particularly helpful in information for the beginner, with illustrations of terms which may well be known to the expert, but may likely fog the more uninitiated. The history of the stamps is shortly followed and its contents include watermarks, postmarks, errors, forgeries, classic stamps, local stamps, perforations, etc., so the reader should have a sound knowledge of collecting

HOBBIES STAND AT THE BIF

ONE of the largest stands in that particular section of the British Industries Fair at Olympia last month was the attractive stand of Hobbies Ltd. Proof of this was the constant attention it received from visitors all day long. All the tools, machines and materials were excellently displayed, and diffused lighting and tasteful colouring showed up the plated tools and polished woodwork to great effect. Apart from the general interest there were three outstanding points. A full size window had been set out with Hobbies goods (centre background in the picture) to show buyers what could be done. A new type of bicycle fretmachine being used for curative purposes in occupational therapy centres. And a large Georgian Doll's House (look out for news about it!) revolving in the foreground. In an Exhibition where display stands are really wonderful, you may be sure Hobbies was among the best.



from the concise, and informative matter in its pages. Those who think they might be interested in the hobby would certainly be convinced after a perusal and study of this reasonable little book.

Published by Penguin Books, West Drayton, Middlesex—Price 1/6

Ships in Bottles

by J. P. Lauder and R. H. Biggs

ONE would hardly think there is enough to write about on this subject to fill a 74-page book, but the combined authors have certainly done so very efficiently. The mystery of those tiny full-masted ships which you see in all kinds of bottles is revealed, so that the patient beginner can undertake to puzzle and please his friends and feel cock-a-hoop at his own wonderful ability. Drawings and photographs illustrate the pages profusely and each step in the process is explained in detail. From the number of readers of Hobbies Weekly who write for information we know how popular the subject is, and now we can recommend a practical book on the subject at a reasonable price which certainly covers all the 'gen' on a fascinating and delicate subject.

Published by Percival Marshall & Co. Ltd., 23 Great Queen Street, London, W.C.2—Price 3/6

How to Repair Furniture

by Raymond Yates

HOW often do we regret having to discard a comfortable or sentimentally valued piece of furniture because it needs repairs and does not seem worth the very high price—apart from the interminable time—needed to put it right. Well why should you? Here is a book which will literally save you money and provide you happiness at the same time. The author knows

what he is talking about, because he has been doing this sort of thing for years. He deals with everyday things, troubles you find in most homes, and which he deals with in an easy and economic way. Apart from early chapters on tools, the book deals with those all-too-common complaints in the home—broken legs, warped boards, non-slide drawers, etc. And having done a suitable and satisfactory repair he tells you a variety of ways in which to finish it—varnish, oil, polish, lacquer, enamel, etc., even apart from woodfillers, stains, etc., and processes of upholstery for your seating needs. Altogether a book worth a place in any handyman's home. For those just starting a home it could not be more valuable, when you think of the opportunity of 'picking up' damaged furniture, which you can make first class by following the advice given in this worthwhile book.

Published by Nicholas Kaye, Trebeck Street, London, W.1—Price 8/6

Cricket

by Andrew Sandham

NOW then, you budding county cricketers, here is your chance. Instruction by the official coach at the Oval and formerly Surrey and England player. What more could you want for 2/6? Mr. Sandham can write as well as play cricket and illustrates his points with equally clear photographs. All branches of the game are dealt with, in clear incisive wording easy to understand and follow. A fascinating book to read, giving an urge to improve your present standards and instruction how to do it. Apart from the helpfulness of general and specialized play, the last chapter deals with the culminating triumph of Captaincy! Something to aim for and attain. But what ideals and virtues it demands! The author suggests

you need wisdom, resourcefulness, imagination, diplomacy, an even temper, patience, calmness. And he should know. But even if you never hope to enjoy all these and attain a captaincy, you can certainly improve your play and enjoy your cricket more after reading this book.

Published by W. and G. Foyle Ltd., 119/125 Charing Cross Road, London, W.C.2—Price 2/6

Your Radio and Television

NO one can doubt the increasing interest in the modern necessities of life, and the amateur who has more than the usual haphazard knowledge, is keeping in touch with progress. The book is not entirely technical but covers general interest matters as well—a variation which makes for interesting as well as informative reading. There are 128 pages with 80 illustrations and subjects are dealt with by leading personalities and acknowledged experts in the radio field. There are fascinating chapters on Outside Broadcasts by Wynford Vaughan Thomas, 'Here is the News' by Frank Phillips, How Programmes Originate, by Richard Rowlands, whilst on the technical side explanation is given on choosing, installing, and operating a set. All very helpful and interesting. And who would think a chapter necessary on 'How to Look and Listen'? But there it is—quite packed with points we should all know and follow to get the full and real enjoyment from our sets. How few of us do can be realized after reading just that one chapter! Altogether a most interesting and helpful book without the technicalities and highflown language usually associated with this vast and bewildering subject.

Published by Odhams Press Book Department, 67/8 Long Acre, London, W.C.2—Price 3/6

Loom—(Continued from page 197)

in the first heald, and then tied to the rear rod in carrier (D). The second thread is passed between the first and second heald and tied to (D), the third thread through loops in second heald, the fourth thread passed between the second and third heald, and so on to the number of warp threads used. See each thread is of equal tension.

Now depress the heddle, which will carry half the threads below the rest, and leave a space for the shuttle to pass between, when weaving. Note, with a pencil mark, where pin (a) on the heddle comes on the slide. Now pull heddle up until the threads it carries are now above the rest, and make a second mark on the slide where the pin comes.

Heddle Position

Remove the slides, after untying the threads, of course, and where these marks come, cut small notches one side of the groove where the pins move up and down. These are shown in Fig. 2. The heddle frame can now be fixed in the low or high position by pressing it back until the pins (a) catches in one of the

notches, and so allows free movement of the hands to manipulate the shuttle. Replace the slides and the loom is finished, and ready for use.

A shuttle for the loom is illustrated in Fig. 4 (J). It can be cut from $\frac{1}{2}$ in. fretwood, but better, perhaps, to use a thinner plastic material. When cut to the shape, carefully glasspaper off all rough edges. For using different colours of weft thread, two or three shuttles are necessary.

Another point, when the whole of the warp threads are tied on, weave narrow strips of plastic or celluloid, between the threads to keep them apart, as in diagram (I). If this is not done, the threads are apt to bunch together. Two strips, $\frac{1}{2}$ in. wide will be enough, and are placed as near as possible to the rod in

the rear carrier (D).

In use, the slide and heddle are brought forward, but as the weaving proceeds they are pushed back enough to allow of working until the job is finished. Work up to 3ins. wide can be done on the loom, and where longer lengths than the present capacity are required, the horizontal bars could easily be lengthened to a reasonable extent. Though only tabby weaving can be done on this loom, the variety of stripes, squares, etc., possible is immense, and will quite likely stimulate interest in more complicated patterns later.

The Wood to Use

The wood used can be oak or beech or deal, if the former are not obtainable. Hardwood, of course, is much to be preferred for making an article of this kind, it wears longer and makes for smoother action. Quite a small quantity is required. For the carriers, a 1ft. length of $\frac{3}{4}$ in. board only is needed, with two 3ft. 6in. bars of $\frac{1}{2}$ in. by 1in. wood for the horizontals (C). A 4in. by 9in. panel of $\frac{1}{2}$ in. fretwood for the slides and shuttle, and a similar panel of $\frac{1}{2}$ in. wood for heddle and the parts specified. (183)

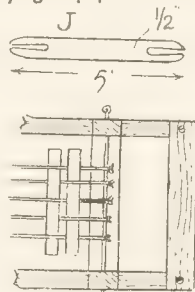


Fig. 4 — A suitable shuttle

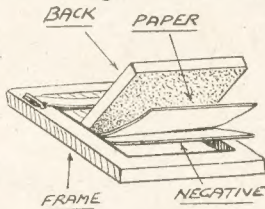
PHOTOGRAPHIC ALPHABET

Here is the second of our series of helpful hints for photographers. A dictionary of terms frequently used, and sometimes unexplained.

C for—

CONTACT PRINTS

A PRINT from a negative can be made in one of two ways—either by putting the negative into a glass-fronted frame with a sheet of sensitive paper behind it and exposing to light, or by placing it in an 'enlarger' and throwing a picture of the negative (in the same way as a magic lantern does) on to the paper pinned up some little distance away.



As the paper in the first case lies against and touches the negative, prints made in this way are spoken of as 'contacts' or 'contact prints'. The size-for-size prints you get from the chemist or D & P agent are all 'contacts'. The second method is usually used for enlarging, although size-for-size prints can be produced this way.

CAMERA SHAKE

PICTURES can be blurry for several reasons. The subject may have been too near if the camera is a fixed-focus box, or there may have been wrong focusing if of a focusing type. These causes can always be recognised by the whole image being diffused and lacking definition. If, however, the blurriness has a dragged sideways appearance, then the fault has come about by jerking the camera at the moment the lens was open, thus causing the picture to slip a little. This sort of fuzziness is spoken of as 'camera shake' and can always be clearly detected on close examination. It is generally caused by jabbing the trigger too hard. If possible the camera should be held with one finger underneath, the lever being moved with the thumb, or vice versa. This means that by a slight pressure upward the downward movement can be counteracted and the trigger 'squeezed' rather than pressed.

The very best way to make an exposure is to have the camera against something solid, say, a gate-post or wall. Newspaper photographers go to endless trouble to avoid 'camera shake'.

COLOUR FILM

A COLOUR film is one which goes through your camera in the usual way but which gives a coloured transparency, like a lantern slide, when developed. How it does this mystifies many people, but the principle is really

very simple. With an ordinary film, although the surface looks smooth, the sensitive emulsion is really made up of thousands of little grains, each individual, which have the ability of blackening according to the amount of light that falls on them, this being the way we get the picture.

With a colour film the emulsion is made up of grains which have the characteristic of taking up the colour that falls upon them. Thus, if the ray is yellow, the grain becomes yellow, etc. It is all a matter of very simple chemical reaction.

Colour film can be bought in the usual 3½ ins. by 2½ ins. size and certainly gives some very charming results.

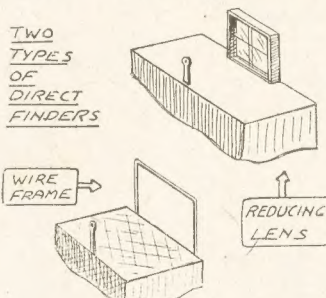
D for—

DIRECT FINDER

THERE are two types of finders. Those you look down on to a small pane of glass set horizontally, as with box cameras, and those where a piece of glass or a frame is set vertically and you peep into it by holding the camera to the eye. In this case you look straight at the view through the arrangement and so they are spoken of as *direct finders*.

There are several types, but most

TWO TYPES OF DIRECT FINDERS



make use of a reducing lens in which you see the scene in miniature. The lens is crossed by two lines and the camera is set on the scene by aligning with a pointer fixed at the back. A very simple form of direct finder is just a wire frame the same size as the film, located in front, with a pointer at the back. When raised to the eye the subject can be clearly seen outlined by the frame and, with this kind, good composing of a picture is easy, as the subject is seen full size.

DESENSITISER

THIS is a very handy solution that amateurs might use quite a lot more with advantage. It is a variety of dye (obtainable from any photographic dealer) and its effect is to make a film no longer sensitive to light (or, at least, subdued light).

It is used in development and if a film is run through the solution for one minute in total darkness when taken from the camera, development can then be carried out in candle light, which is much more convenient than the usual dim red of the ordinary dark-room lamp. The solution can be poured back into a bottle and used repeatedly.

A second way of employing desensitiser is to add a little to the developer and then develop the film for one minute in the red light, after which the candle can be lighted and development completed in its comfortable illumination.

The usual desensitiser is pinacryptol green and there is now a yellow desensitiser being used. Both cost very little. It is good to store all desensitisers in a dark bottle. Incidentally, although these desensitising solutions are in the nature of dyes, they do not in any way mark or tint the film or plate placed in them.

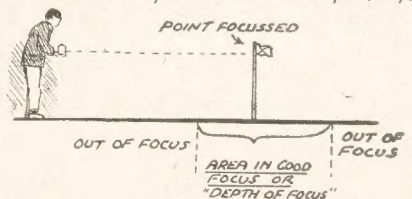
DEPTH OF FOCUS

IF you look closely at most photographs you will see that items nearer in than a certain distance are fuzzy, while those beyond a certain distance are also out of focus. This makes it that the area in good definition is really a band running across the picture from side to side.

The distance from the nearest to the furthest well-focused point is spoken of as the 'depth of focus' and this distance can be altered by different settings of the lens.

The less amount of the surface used the greater the depth. Thus the smaller the 'stop' (or hole in front of the glass through which the rays get) the nearer and further will things be in definition and a small stop must be used if a great depth is required.

With focusing cameras the further away the point focused on, the greater the depth of focus automatically becomes. If you focus on an object, say,



at 7ft., the depth might only be from 5ft. to 9ft. (i.e., 4ft.), but if 40ft. was the point to which the scale was put, the range might easily become 25ft. or more.

Most box cameras are fixed at a range that brings everything from about 12ft. to infinity in focus.

MISCELLANEOUS ADVERTISEMENTS

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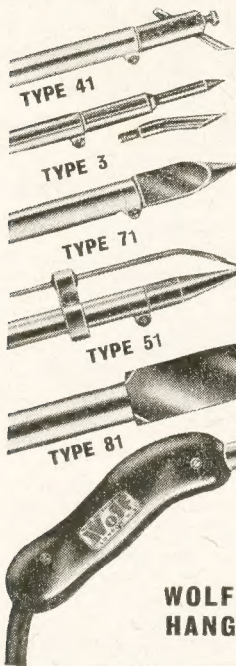
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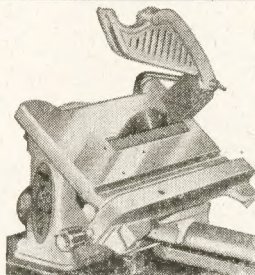
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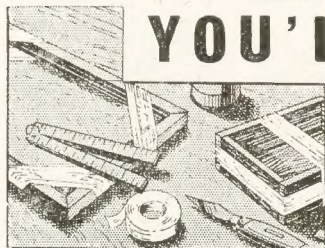
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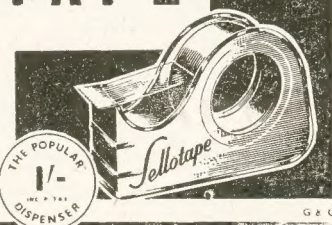
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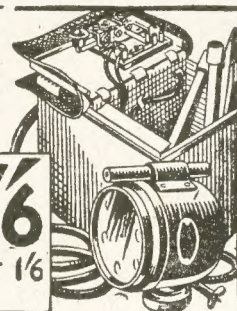
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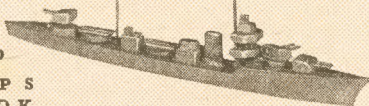
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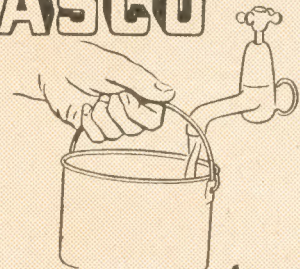
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